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HISTORY OF AIR EXPRESS

BY JOHN H. FREDERICK AND ARTHUR D. LEWIS†

One of the first experiments in the transportation of property by air in the United States occurred in the winter of 1919, when the American Railway Express Company, in testing the possibility of transportation of express on scheduled flights, loaded a four-engined Handley-Page bomber with 1,100 pounds of express for a flight from Chicago to New York. A series of accidents, the last one near Cleveland, resulting in loss of a wing caused the flight to be canceled and the goods to be sent the rest of the way by rail.¹

From that time until 1926 air express activities were carried on irregularly by various fixed base operators. Shipments during that time were made primarily for advertising purposes. However, at scattered intervals emergencies would arise which would produce shipments under the rates as listed below. During the years shown in Table I the Aeronautical Chamber of Commerce of America sent questionnaires to the fixed base operators asking for information on rates and volume of shipments; and of those operators that replied, the average rates charged and total volume of goods transported by them were:

TABLE I
*Air Express Operations, 1921-1924**

	1921	1922	1923	1924
Operators reporting	125	129	124	60
Freight carried by pounds.....	123,221	110,663	208,302	71,004
Average charge per pound-mile..	.33	.03	.10	.0018

* *Aircraft Yearbook*, Aeronautical Chamber of Commerce of America, New York, 1924, p. 8, 1925, p. 54.

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1. Wilson, G. Lloyd, *Air Transportation*, Traffic Service Corporation, Chicago, 1938, p. 10.

An incomplete breakdown of traffic in 1923 showed that a few operators carried 14,200 pounds of newspapers, 32,000 pounds of oil machinery and equipment, and 95,000 pounds of miscellaneous merchandise.²

Unfair comparisons have been made relative to air express operations in the United States and in Europe during this early period. These comparisons were not valid because domestic air express operations were not subsidized in any way; whereas, most of the companies on the European continent were heavily subsidized by outright government grants. It is only because of this reason that air cargo rates were sufficiently low on the continent to justify a scheduled exclusive-cargo plane operating between London and Cologne in 1919, and a similar service to be inaugurated between London and Paris in 1924.³

The development in air express during the latter part of the 1920's was stimulated by the transfer of the air mail service to private carriers. The carriage of mail on fixed schedules with its constant source of revenue provided the basis for the transportation of cargo on scheduled flights at rates considerably lower than they had previously been. This act on the part of the government marked the re-entry of the American Railway Express Company into the air express field when it signed contracts with four mail contractors: National Air Transport operating between New York, Chicago, and Dallas, Texas; Boeing Air Transport operating between Chicago and San Francisco; Western Air Express operating between Salt Lake City and Los Angeles and with Colonial Air Transport, Inc., operating between Boston and New York. The total mileage included within this first set-up was approximately 4,450 miles and provided for a one company transcontinental operation. The agreements wherein the rail express agency would pick-up and deliver the air express shipments and the various airlines would carry it between the cities went into effect on September 1, 1927; between that date and December 31, 1927 these four companies carried approximately 5,160 shipments.⁴

The rates in effect under these early agreements were extremely high. Under the first tariff the rate per ton mile averaged \$2.72.⁵

2. *Aircraft Yearbook*, Aeronautical Chamber of Commerce of America, New York, 1924, p. 15.

3. *Aviation*, November 24, 1924, p. 1311.

4. Information received from the Railway Express Agency.

5. Selig, N. S., Mitchell, J. D., and Burstein, A., "A Brief Study and A Plan of The Participation of The American Railroads in Air Freight Operations In The United States," General American Transportation Corporation, Chicago, 1940. p. 10.

The rates were stated in units of a quarter pound or fraction thereof with a minimum density of 50 cubic inches per quarter pound, and upon a valuation not to exceed \$50 for packages weighing less than 100 pounds or 50 cents per pound actual weight for packages over 100 pounds. The rates for five, ten, and seventy pound packages from New York to Chicago were \$5.00, \$10.00, and \$70.00, respectively. The rates for five, ten and seventy pound packages from New York to Los Angeles were \$13.00, \$26.00, and \$182.00, respectively.⁶ These rates were approximately 15 per cent less than the then existing air mail rate and ranged from 7 to 20 times as high as the rail express.

This first uniform contract signed between the American Rail-

TABLE II

*Express Income Received by the Airlines Contracting
with the Railway Express Agency**

Year	Gross Air Express Revenues for Car- riers Operating with the Railway Express Agency	Amount Paid by Railway Express Agency to Con- tracting Airlines (1)	Per Cent of Gross Revenue Received by Airline Contractors	Per Cent of Gross Revenue Received by American Rail- way Express Co. or Railway Express Agency
1927	38,176.41	13,832.98	36.1	63.9
1928	130,774.29	67,542.13	49.1	50.9
1929	138,401.74	76,680.65	55.3	44.7
1930	90,146.06	47,395.07	52.5	47.5
1931	64,708.32	33,048.86	51.2	48.8
1932	95,347.56	64,318.31	67.5	32.5
1933	217,966.67	148,790.77	68.5	31.5
1934	412,951.29	296,094.39	71.7	28.3
1935	587,076.92	432,232.94	73.8	26.2
1936	1,339,833.02	880,834.38	65.8	34.2
1937	1,700,463.43	1,152,949.15	67.7	32.3
1938	1,919,874.97	1,278,557.30	66.7	33.3
1939	2,385,142.45	1,620,685.43	68.0	32.0

* Adopted from Sellig, N. S., Mitchell, J. D., Burstein, A., "A Brief Study and Plan For The Participation of The American Railroads in Air Freight Operations in The United States," The General American Transportation Corporation, Chicago, 1940, p. 33.

(1) From September 1, 1927 to December 1, 1931 the airlines contractors received 75% of revenues after all expenses to the Railway Express Agency were deducted and the Railway Express Agency received 25%. From December 31, 1931, to the present the division has been 87½% to airline contractors and 12½% to the Railway Express Agency after all expenses of the Railway Express Agency have been deducted.

6. Quindry, Frank E., "Air Express, Development and Service," 4 *Journal of Air Law* 132.

way Express Company and the airlines provided for the transportation of air express wherever possible by the airlines. The American Railway Express Company was to use the rail express facilities as an auxiliary in reaching points not served by the contracting lines and was to provide the ground delivery from airport to the point of destination. The split up in revenue gave 25 per cent of the gross income to the railway agency and 75 per cent to the airline after a deduction had been made to cover the costs to the railway agency for pick-up, delivery and solicitation. In 1928 the total revenues for carrying express by these contracting companies amounted to \$130,774 of which \$63,232 (50.9 per cent) went to the American Railway Express Company and \$67,542 (49.1 per cent) went to the airlines. This breakdown of revenue is shown from 1927 through 1939 in Table II.

The rate for air express remained at its extreme height even though on August 1, 1928 the air mail rate was reduced approximately in half and was then considerably lower than air express. However, those making the rates for the airlines contracting with the American Railway Express Agency did not consider it necessary to reduce the air express rates, and the volume of air express shipments decreased from 191,474 pounds in 1929 to 128,147 in 1930 and 105,668 pounds in 1931 for those carriers.⁷ The Railway Express Agency gives, as the reason for this drop in shipments, the influence of the depression even though the rail express rates were much higher than air mail rates, and even though all other branches of air transportation expanded tremendously during this period.

Minor rate changes were made in 1930. Lighter shipments of one and two pounds going for short distances were significantly cut but only slight reductions were made for the heavier articles.⁸ With this exception, the rates remained the same until December of 1931.

The first contracts signed by the American Railway Express Company provided for restrictions on the type of package transported both as to content and to size. Shipments of live animals, extremely fragile articles, explosives and highly inflammable material could not be made by air. Special arrangements had to be made, previous to shipping time, if a package were more than sixty inches in length or more than nineteen inches in width, or if the combined lengths and girth were more than 106 inches. Special arrangements had to be made, also, if a package were more than 40 inches long

7. Information received from the Railway Express Agency.

8. Selig, N. S., Mitchell, J. D., and Burstein, A., *Supra*, p. 25.

and more than four inches deep.⁹

The most striking development of air express during this period was the shipment of Ford automobile and airplane parts by air from Detroit to Chicago and from Buffalo to Detroit privately with Ford planes and men. Partly in order to evaluate and test airplanes manufactured by the Ford Aircraft Company and partly to train pilots, this air freight operation was in existence from 1925 to August, 1932 when Mr. Ford discontinued manufacturing airplanes. During that time this operation moved 11,789,955 pounds of freight.¹⁰ Only in 1932 did the weight of shipments carried by the common carriers exceed those of the Ford Airline. Scheduled departures were rigidly adhered to; and in order to have a loaded plane, many shipments made a round trip. The Ford planes were not operated for a profit—purely for experimental purposes.

By the end of 1929 the system which the Railway Express Agency assumed after the reorganization of the old American Railway Express Company, had expanded to include Boeing Air Transport, Clifford Ball, Continental Air Lines, Embry-Riddle, National Air Transport, Northwest Airways, Pacific Air Transport, Robertson Aircraft Corporation, Thompson Aeronautical Corporation, and Western Air Express. In addition to these airlines operating under contract with the Railway Express Agency there were numerous small mail carriers as well as passenger operators who were carrying air express. These were: Colonial Air Transport, Colonial Western Airways, Standard Airlines, Stout Air Service, West Coast Air Transport Corporation, Gorst Air Transport, Mason and Dixon Air Lines, Rapid Air Lines, Seagull Airlines, Capital Airway, Transcontinental Air Transport-Maddux.

The ten airlines contracting with Railway Express Agency transported 191,474 pounds of air express (75 per cent of total) during that year. In 1930 the Railway Express Agency expanded its system to include Mid-Continent Air Express, National Parks Airways, and Varney Air Lines, and the airlines connected with the Railway Express Agency transported 61 per cent of the total air express pounds shipped. No more airlines joined the system until in 1932 when Kohler Aviation Corporation,¹¹ contracted with the rail agency. In 1931 and 1932 the Railway Express Agency system transported 13 and 27 per

9. Blee, Harry H., "The Future of Air Express", *Aviation*, December 14, 1929, p. 1157.

10. Compiled from U. S. Department of Commerce, Aeronautics Branch, *Air Commerce Bulletin* 1929-1932.

11. Airlines subsequently joining system tied together by the Railway Express Agency were: in 1933, Rapid Air Transport, Hanford Tri-State Airlines; 1934, Bowen Air Lines, Braniff Airways, Central Airlines, Wyoming Air Service,

cent, respectively, of the total air express poundage as is shown in Table III.

TABLE III
*A Comparison of Approximate Volume of the Traffic Carried by
Railway Express Agency, General Air Express, and
Independent Airlines**

Year	Pounds Carried by Independents	Pct. of Total Pounds Carried by Independents	Pounds Carried by Members of General Air Express	Pct. of Total Pounds Carried by Members of General Air Express	Pounds Carried by Operators Contracting with the Railway Express Agency	Pct. of Total Pounds Carried by Operators Contracting with the Railway Express Agency
1928	108,583	50			108,061	50
1929	63,969	25			191,474	75
1930	81,375	39			128,147	61
1931	682,391	87			105,668	13
1932	462,247	45	293,786	28	277,937	27
1933	222,618	14	704,052	47	583,545	39
1934	173,280	9	654,927	30	1,304,984	61
1935	372,327	11	1,143,003	29	2,307,071	60
1936	739,001	11	1,827,923(1)	26	4,391,853	63
1937	274,673	4	313,786(2)	4	6,538,910	92
1938	143,206	6			6,878,657	94
1939	148,107	2			9,366,192	98

* Compiled from U. S. Dept. of Commerce, *Air Commerce Bulletin*, Aug. 15, 1938, Sept. 15, 1938, Dec. 15, 1939. Civil Aeronautics Authority, *Civil Aeronautics Journal*, Jan. 1, 1940, March 15, 1941.

(1) Estimated on basis of 2/3 years total for airlines that joined with Railway Express Agency in August, 1936.

(2) Estimated pounds for Transcontinental & Western Air's operation under General Air Express for 9 months. It is 75% of Transcontinental & Western Air total express pounds carried during the year.

The air express service available in 1929 touched 82 different cities. Direct service was offered from Boston to New York, New York to Los Angeles and San Francisco and the intermediate cities making possible 36 hour service from coast to coast. Other large industrial cities receiving air express were Pittsburgh, Cleveland, Cincinnati, Detroit, St. Louis, Tulsa, Dallas, Minneapolis, St. Paul, Lincoln, Pueblo, and intermediate points. Also, between Los Angeles, San Francisco, Seattle, and intermediate airports, and between Los Angeles, Albuquerque, Wichita, Kansas City, and intermediate points.

Pacific Seaboard Air Lines, Delta Air Corporation, New York Airways, Robertson Airplane Service Company, Boston-Maine Airways, Central Vermont Airways, Columbia Airlines; in 1935, Chicago and Southern Air Lines, Wedell Williams Airline, Waterton Airways, Columbia Airlines; in 1936, American Airlines, National Airlines, Eastern Air Lines, Pennsylvania Airlines and Transport Co., Varney Air Transport; in 1937, Transcontinental and Western Air. See, Peterson, Gilbert C., "Growth of the Air Express Business", *Aero Digest*, November 1938, p. 64. (Some of the airlines listed above have since changed name and have assumed the same contract the old company had.)

In 1929 Colonial Airways broke its contract with the Railway Express Agency and made contracts with Western Union Telegraph. It was the first contract of its kind and introduced the cooperation of the airlines and the telegraph companies. The shipments were concentrated at the downtown passenger terminal by the messenger boys from where they were transported to the airport in the passenger busses.¹² The minimum rate was \$5 per package between New York and Boston with a maximum weight of five pounds per package at this charge.

1930 witnessed the spread of the method of using the Western Union's organization for the pick-up and delivery systems. Air Ferries, Ltd., operating between San Francisco and Oakland, and Valejo contracted with this company also. In 1931, Postal Telegraph entered the field with a contract with Transcontinental and Western Air. Pick-up and delivery was offered by the telegraph company at a rate of 70c a package regardless of weight. In order to completely cover the costs of providing the service, an agreement was made to reimburse Postal Telegraph an additional 5 per cent of the net revenue after pick-up and delivery charges had been subtracted from gross revenues.¹³ When the General Air Express Agency was organized in 1932, Postal Telegraph provided the pick-up and delivery mechanism.

During the period from 1927 to 1930 there was little effort to establish a pure air express operation. It was not economically feasible to operate only express schedules as the cost per ton mile was too high if it were not paired by mail and passenger revenues. An effort was made to inaugurate such a service in 1929 when the Aerial Express Corporation of Los Angeles was incorporated to operate a pure air express route on the west coast. It was thought that traffic of perishable fruits and vegetables would be sufficient to justify the operation.¹⁴ Records do not show whether the company ever inaugurated the service or not. United States Aerial Express Lines was formed for the purpose of operating three transcontinental air express routes and two eastern coastal services. According to the data compiled by the Air Commerce Bureau of the Department of Commerce, this company never began operations.

Throughout the years 1928 to 1933 many small airline companies were formed for the purpose of operating passenger and express lines in the hope of eventually getting mail contracts. Some of these companies, which operated for a few months and then dis-

12. *Aviation*, August, 1929, p. 448.

13. Selig, N. S., Mitchell, J. D., and Burstein, A., *Supra*, p. 17.

14. *Aviation*, Nov. 9, 1929, p. 952.

continued services, contributed heavily to the volume of express carried in the period of their existence. Mutual Airlines operated during the year 1928 and transported 95,135 pounds of express—more than any other common carrier during the one year of its existence. Michigan Air Express during the one year of its operation, 1930, transported 73,182 pounds of cargo and was second largest express carrier from the standpoint of pounds carried. Its operations were assumed by Kohler Aviation Corporation early in 1931 as is shown in Table IV.

Some of these independents were successful in developing a large volume of air express traffic during these years by soliciting regular contract shippers and by offering unique pick-up and delivery systems. These airlines not connected with the Railway Express Agency, and therefore not in anyway hindered in their attempts at development of air express, in 1931 transported more than one-half the entire express shipments in that year. Century Airlines, the third largest air express carrier during that year, contracted with a Chicago Mail Order House for the carriage of packages daily to Cincinnati for mailing.¹⁵ The service was later discontinued due to the fact that the extremely low rate which was made for this service was below the cost of transporting the goods.

The largest express carrier, Ludington Airlines, transported 267,700 pounds of express between New York and Washington during 1931. The rates in effect were \$1 for the first pound and \$.20 for each additional pound, with liability limited to \$50 unless an additional charge was paid of \$.30 for each \$100 valuation over \$50. Collections and deliveries were made by Western Union with no additional charge.¹⁶ Information is not obtainable as to whether the large volume of express was obtained under these rates in combination with the company's fast shuttle service or whether other special contract arrangements were made with shippers which made up this large volume.

What was done by the small independent lines is illustrated by the operations of Air Ferries, Ltd., which in 1931 operated across San Francisco Bay at San Francisco, California. Initially they carried packages across the bay at a flat rate of 10c per pound and provided no pick-up and delivery service. There was such a demand that in April, 1931 they expanded their services and made provisions for complete pick-up and delivery by means of a motorcycle and

15. *Aviation*, March, 1932, p. 145.

16. *Aviation*, April, 1931, p. 202.

TABLE IV
Air Express Carried by Domestic Air Carriers
 (pounds)

Began Carrying Air Express Before	Operator	1928 - 1933				
		1928 (w)	1929	1930	1931	1932
1929	Clifford Ball (Inc.).....	2,146	1,756	396 (a)	.....	.....
	Boeing Air Transport.....	24,080	27,047	15,326	(g)	.....
	Colonial Air Transport.....	1,950	1,300	4,731	(h)	.....
	Colonial Western Airways.....	243	446	13	(h)	.....
	Embry Riddle Co.....	671	420	472	(h)	.....
	Midwest	35	0 (a)	.....	.....	.....
	Mutual	95,135 (c)	(a)	.....	.....	.....
	National Air Transport.....	68,190	73,642	54,293	(g)	.....
	Pacific Air Transport.....	3,296	2,695	4,761	(g)	.....
	Standard Airlines	336	1,980	(a)	.....	.....
	Stout Air Service.....	500	21,022	33,316 (a)	.....	.....
	Texas Air Transport.....	9	000	(a)	.....	.....
	West Coast Air Transport Corporation..	250	171	398 (a)	.....	.....
	Western Air Express (Inc.) (n).....	13,598	37,723	32,779	6,398	19,323
1929	Capital Airways.....		320 (a)	.....	.....	.....
	Continental Airlines		45,646	(e)	.....	.....
	Gorst Air Transport (b).....		6,589	15,414	36,901	18,445
	Maddux Air Transport.....		11,395 (d)	.....	.....	.....
	Mason and Dixon Airlines.....		246	107 (a)	.....	.....
	Northwest Airways		1,045	000	840	7,329
	Thompson Aeronautical Corporation.....		461	4,095 (a)	.....	.....
	Rapid Air Lines.....		40 (a)	.....	.....	.....
						52,925 (n)
						4,051
						29,303
					
					

TABLE IV (continued)

TABLE IV (Continued)							
1928 - 1933							
Began Carrying Air Express	Operator	1928	1929	1930	1931	1932	1933
1929	Robertson Aircraft Corporation.....						
	Seagull Airlines		1,039	(e)			
	Transcontinental Air Transport-Maddux Airlines		322(a)				
			2,938	9,398(f)			
1930	Delta Air Service.....			610(a)			
	Dixie Flying School.....			6			
	Kohler Aviation Corporation.....			94,324	80(a)		
	Mamer Air Transport.....			2,343	56,137	76,217	13,469
	Frank Martz Coach Company.....			1,000	1,225	519(a)	
	Michigan Air Express.....			73,182	000(a)	(m)	
	Mid-Continent Air Express.....			5	34(i)		
	National Parks Airways.....			220	211(j)		
	Pennsylvania Air Lines.....			526	144	2,744	5,463
	Pickwick Airways			12(a)	902	8,278	23,469
	Pittsburgh Airways			8			
	Rapid Air Transport.....			8	000(a)		
	Sky View Flying Service.....			495(a)	145	280	2,600
	Southern Air Transport.....			1,532			
	Transcontinental & Western Air (Inc.)..			7,881	(h)		
	Universal Aviation Corporation				56,399	137,614	288,026
	Continental Airlines			12	(h)		
	Robertson Aircraft Corporation.....			738	(h)		
	Varney Air Lines.....			386	(h)		
	Wedell-Williams Air Service.....			85	(g)		
	Western Air Service Corporation(x)....			1,100	000(a)		
					000(a)		

TABLE IV—(Continued)
1928-1933

Began Carrying Air Express	Operator	1928 (w)	1929	1930	1931	1932	1933
1931	Air Ferries (Ltd.).....				119,270	(a)	.....
	American Airways					65,097	272,905
	Colonial Division				10,882	(1)	(1)
	Embry-Riddle Division				1,162	(1)	(1)
	Southern Division				6,586	(1)	(1)
	Universal Division				478	(1)	(1)
	Century Airlines				5,507	7,086(a)	.....
	Century Pacific Lines				73,208	26,441(a)	.....
	Clarksburg Airways				27,800(a)	.....	.....
	Eastern Air Transport(v)				11,352	15,801	112,716
	Ludington Airlines				276,700	36,895	2,006(p)
	Robertson Airlines				12(a)	.....	.....
	Transamerican Airlines Corporation.....				20,170	29,590	2,328(r)
	United Airlines						
	Boeing Air Transport.....				10,007	43,283	144,617
	National Air Transport.....				43,831	97,177	265,687
	Pacific Air Transport.....				5,534	25,656	69,206
	Varney Airlines				640	6,210	(s)
	United States Airways				580	511	2,602
	Varney Air Service.....				2,496	331,563	(t)
	Wilmington-Catalina Airline				3,282	69,098	93,687
	Wyoming Air Service Corporation.....				912(a)	.....	.....
1932	Champlain Air Transport.....					602	20(a)
	Coast Airways					544(a)	.....
	Intercity Airlines					12	5(a)

TABLE IV—(Continued)

Began Carrying Air Express	Operator	1928-1933			
		1928 (w)	1929	1930	1931
1932	Maine Air Transport Company.....				
	Martz Air Lines (y).....			2,890	1,510(a)
	Portland Airways			1,946	60(q)
	Wyoming Air Service (Inc.).....			1,463	100(a)
	Air Express Corporation.....			1,240	267
1933	Cordiff & Peacock Air Lines.....				3,234(o)
	Commuters Air Service.....				9,315
	Hanfords Airline (Inc.).....				7
	Licon Airways				275
	Ozark Airways				81
	Pacific Seaboard Air Lines.....				117
	Reed Airline				36,433(u)
	Varney Speed Lines.....				13
	Wedell-Williams Air Service Corp.....				74,690
	Total Air Express.....	216,644	255,443	209,523	788,059
				1,033,970	1,510,215

(a) Discontinued operations under that name.

(b) This company for first 6 months of 1929 was named Barnes and Gorst.

(c) No report for first half.

(d) Combined with Transcontinental Air Transport during the year to become Transcontinental Air Transport-Maddux.

(e) Became an operating company of Universal Aviation Corporation during this year. See Universal Aviation Corporation 1930.

(f) Organized to unify the services of Transcontinental Air Transport - Maddux and Western Air Express Corporation between New York and Los Angeles. Owned jointly by the two companies.

(g) Became an operating division of United Airlines. See United Airlines 1931.

(h) Became an operating division of American Airways. See American Airways 1931.

(i) Operations taken over by Kohler Aviation Corporation May 1.

(j) Operations taken over by Western Air Express August 1, 1931.

(k) Organized to offer a pure air express service from New York to Los Angeles. Discontinued operations after two services.

(l) Included in above total.

- (m) Name changed to Martz Air Lines. See 1932.
 (n) Became Western Air Express Corporation in reorganization in 1934.
 (o) This company was formed for the purpose of carrying air express only. Discontinued operations after two months.
 (p) Consolidated with Eastern Air Transport, February 15, 1933.
 (q) Consolidated with American Airlines, February, 1933.
 (r) Company consolidated with American Airlines, February, 1933.
 (s) Route flown by this division was combined with routes flown by the Boeing Air Transport division.
 (t) Changed name to Varney Speed Lines. See 1933.
 (u) Received mail contract in 1934 and became Chicago and Southern Air Lines.
 (v) Operating subsidiary of North American Aviation Corporation.
 (w) Statistics unavailable for this year for a few air transport companies who operated for a few months and then dissolved.
 (x) Formerly Browers Air Service. July and August figures not available.
 (y) Formerly Frank Martz Coach Company.

TABLE IV—(Continued)
Air Express Carried by Domestic Air Carriers
 (pounds)

Year	Operator	1934 - 1939					
		1934	1935	1936	1937	1938	1939
1934	American Airlines	332,904	599,642	1,654,113	2,049,179	2,143,631	2,731,783
	Brown Airlines	8,746	10,577	524(a)	.....	.....	.....
	Braniff Airways	35,118	96,150	187,200	223,861	255,590	285,426
	Central Airlines	37,694	112,352	113,920(d)	.....	.....	.....
	Chesapeake Air Ferries	133(a)	.....	.....	.....	.....	.....
	Chicago and Southern Air Lines	34,942(o)	40,173	58,323	88,481	83,315	115,728
	Delta Air Corporation	1,688	8,110	29,037	40,845	46,780	61,767
	Gorst Air Transport	7,857	7,827(a)	.....	.....	.....	.....
	Hanford Tri-State Airlines	17,109	29,239	(e)	.....	.....	.....
	Island Airlines	3,607(a)	.....	.....	.....	.....	.....
	Kohler Aviation Corporation	1,092(a)	.....	.....	.....	.....	.....
	Licon Airways	2,164(a)	.....	.....	.....	.....	.....

TABLE IV—(Continued)
1934 - 1939

Year	Operator	1934	1935	1936	1937	1938	1939
	Long & Harmon (Inc.).....	12,324(a)	.....	.....	.....	.....	.....
	National Air Line System	5	3,615	5,630	(g)	.....	.....
	National Airways	303	5,796	19,094	(m)	.....	.....
	National Parks Airways	6,008	13,803	21,606	(h)	.....	.....
	Eastern Air Lines(p).....	145,081	195,001	426,432	683,614	837,072	1,140,164
	Northwest Airlines	19,808	72,272	170,274	231,741	283,462	415,637
	Pennsylvania Airlines and Transport....	18,953	93,389	191,581(d)	.....	.....	.....
	Rapid Air Transport.....	127(a)	.....	.....	.....	.....	.....
	Robertson Airplane Service Co.....	529(a)	.....	.....	.....	.....	.....
	Transcontinental & Western Air(r).....	157,616	254,971	397,552	418,382	674,999	1,114,458
	United Airlines Transport Corp.....	1,095,593	1,723,160	2,309,508	2,253,849	2,078,369	2,405,757
	United States Airways.....	373(a)	.....	.....	.....	.....	.....
	Varney Speed Lines(b).....	391	(b)	.....	.....	.....	.....
	Wedell-Williams Air Service Corporation	0	2,638	7,939(f)	.....	.....	.....
	Western Air Express Corporation(q)...	71,739	198,389	475,272	386,400	312,211	360,996
	Wilmington-Catalina Airlines	123,647	133,280	141,531	152,825	132,532	148,107
	Wyoming Air Service.....	7,587	27,489	52,546	28,248	(f)	.....
1935	Columbia Airlines .....	.....	5,857	671(a)	.....	.....	.....
	Consolidated Airlines.....	.....	182,249	413,709(a)	.....	.....	.....
	Land o' Lakes Airline.....	.....	30(a)	.....	.....	.....	.....
	Varney Air Transport(c).....	.....	2,235(c)	4,025	(i)	.....	.....
	Waterton Airways .....	.....	4,108	6(a)	.....	.....	.....
1936	Capital Airlines .....	.....	10(a)	.....	.....	.....	.....
	Condor Airlines .....	.....	162,145	.....	121,848	1,237(a)	.....
	Hanford Airlines .....	.....	48,395(e)	.....	50,108	(k)	.....

TABLE IV—(Concluded)
1934 - 1939

Year	Operator	1934	1935	1936	1937	1938	1939
1936	Pennsylvania-Central Airlines Corp. (d).						
1937	Boston-Maine Airways			67,734 (d)	351,470	362,509	586,927
	Continental Air Lines.....				16,180 (n)	30,870	30,870
	National Air Lines.....				7,157 (i)	16,112	16,112
1938	Inland Airlines(j)				10,410 (g)	13,745	20,744
	Mayflower Airlines					13,524 (j)	23,863
	Mid-Continent Air Lines (k).....					434 (a)	.....
						51,226 (k)	55,960
	Total	2,133,191	3,822,397	6,958,777	7,127,369	7,335,967	9,514,299

- (a) Discontinued operation under that name during the year.
- (b) Changed name to Varney Air Transport in 1934.
- (c) Originally called Varney Speed Lines.
- (d) Central Airlines, Pennsylvania Airlines and Transport Corporation were consolidated on Nov. 1, 1936 and are now operating on Pennsylvania-Central Airlines Corporation.
- (e) Changed name to Hanford Air Lines on January 1, 1936.
- (f) Consolidated with Eastern Air Lines, North American Aviation operating subsidiary on December 1, 1936.
- (g) Reorganization of company, changed name to National Airlines.
- (h) Operations taken over by Western Air Express Corporation on August 1, 1937.
- (i) Varney Air Transport changed its name to Continental Airlines in 1937.
- (j) Wyoming Air Service changed its name to Inland Air Lines.
- (k) Hanford Airlines changed name to Mid-Continent Air Lines.
- (l) Information not available.
- (m) Bought out by Boston-Maine Airways in 1937.
- (n) Assumed routes flown by National Airways.
- (o) Formerly Pacific Seaboard Air Lines operating on the west coast. In shake-up in 1934 received present air mail contract and moved to serve the present route.
- (p) Became independent of North American Aviation in March, 1938.
- (q) Formerly Western Air Express (Inc.)
- (r) Old Transcontinental and Western Air reorganized, issued liquidating dividends to Western Air Express and Transcontinental Air Transport-Maddux and reorganized as Transcontinental & Western Air.
- (s) Compiled from U. S. Department of Commerce, Aeronautics Branch, "Air Commerce Bulletin," scheduled Air Transport operations statistics, 1934, August 15, 1938, *Civil Aeronautics Authority*, "Air Commerce Bulletin," September 15, 1938 - Dec. 15, 1939. Civil Aeronautics Authority "Civil Aeronautics Journal" Jan. 1, 1940, March 15, 1941.

sidecar. Rates were figured to allow for a 25c charge for pick-up or delivery and a flat charge for carrying all packages weighing 50 pounds or less across the bay. This made the total charge on a fifty pound package 75c if pick-up and delivery were included. With the inauguration of the new service the volume of shipments increased to approximately 20,000 pounds per month in June of that year. Monthly rates were made to constant users shipping a 50 pound package or less per day for \$5.00, for just flying the goods across—if pick-up and delivery were required the monthly charge was \$15.00.¹⁷ During the year, Air Ferries transported 119,270 pounds of express, and was second in the field from the standpoint of volume of cargo carried. This carrier discontinued operations at the end of the year.

In 1931 some of the major airlines began to take an active interest in air express. Significant and outstanding was the inauguration by Transcontinental and Western Air of overnight express service from New York to Kansas City. Shipments were to be accepted at all times, and if a plane load were available before time of regular take-off a plane carrying those goods was to be dispatched with another plane leaving on schedule. The service did not include pick-up and delivery and the rate of \$2.90 for 25 pounds was from airport to airport. This rate was approximately 24c per ton mile or about twice that for rail express. For an additional 50 cents per package a Postal-Telegraph pick-up or delivery service would be provided, and each telegraph office of that company was a receiving center for air express shipments. Limitations on the size and weight of shipment were provided with stipulations that the package must be under 200 pounds, the density per pound must be under 200 inches per pound in order to receive the basic rate, and the combined length and girth must not exceed 150 inches unless special arrangements were made. Shipments could be insured for a sum as high as \$5,000 with premiums of \$.25 per \$100 valuation. If the declared value was in excess of \$5.00 an additional charge was made of \$.05 for each additional \$5.00 valuation up to twenty-five dollars.¹⁸ There was not enough traffic originating immediately to pay the expenses of the extra flight, and in a few months it was discontinued.

In 1932, in conjunction with the pick-up and delivery system handled by Postal Telegraph in towns served by the airline, Transcontinental and Western Air contracted for off-line carriage by the

17. Abrams, Monte C., "Air Express Possibilities in the United States," *Aviation*, December, 1931, p. 688.

18. *Aviation*, September, 1931, p. 508.

Greyhound Bus Company. Packages were forwarded from plane to bus, and in all Greyhound stations packages were received and carried to the nearest city that Transcontinental and Western Air served.

On December 12, 1932, Air Express Corporation was organized to provide an air express service between New York and Los Angeles. The flights were to be operated non-stop with the exception of Wichita, Kansas where refueling and a change of pilots would be required. The ships used were Lockheed Orions equipped to carry property only. To reduce damage in transit the packages were sealed in New York and were not removed from the plane until after arrival in Los Angeles. In order to eliminate one of the former disadvantages of air express service, delays in delivery due to poor weather conditions, this company did not advertise intermediate stops and therefore was able to route its planes around the weather. Three reserve planes and pilots were stationed at New York, Wichita, and Los Angeles so that they could be available at a maximum of 3½ hours from any point on the route where a pilot might be forced down by weather conditions. If one airport where regular stops were scheduled was closed on account of bad weather, the pilot on duty would be ordered to another open field, and a reserve pilot would be sent to meet him and replace him.

In order to develop traffic Air Express Corporation provided for non-stop, 17-hour and 45 minutes service westbound and 17-hour service eastbound with no intermediate stops thus eliminating one business day. A reason given for operating non-stop other than to give flexibility to routing was that the cost figures of both the railroads and the air carriers showed that 40% of the costs incurred in operation were caused by the intermediate stops; and yet, they provided only 20% of the revenue. The rates charged were in line with the then existing rates of other carriers.¹⁹

Air Express Corporation operated for two months and then discontinued service due to insufficient traffic. Not adequately financed, it could not sustain the losses necessary for the development of traffic with the then existing high rates. Pick-up and delivery service for the small volume of traffic carried (3234 pounds total volume) was costly, and what service it did offer was inadequate.²⁰

Although the majority of the air express shipments at this time were of an emergency character, a list of the commodities most frequently sent in this manner is interesting. These comprised machinery

19. *Business Week*, December 21, 1932, p. 10.

20. *Business Week*, June 20, 1936, p. 12.

and machine parts, dies, builders hardware, fruits, vegetables, cut flowers, dry goods, millinery, newspapers, jewelry, advertising cuts and mats, currency and bullion, motion-picture films, plans, and specifications of building projects. Some of these commodities such as motion picture newsreels, advertising mats and cuts, were moving by air express in normal business transactions. Every airline operating into Alameda, California, the airport serving the motion picture industry, transported a relatively large amount of express.

Also indicative of the type of air express traffic handled by the airlines at this time was the fact that over the General Air Express system in 1933 the average haul was 781 miles. The average weight of each shipment in this system varied from month to month and from line to line ranging from 8 to 19 pounds. Ninety per cent of these shippers were small scale users, but more than half the traffic originated from a small group who shipped in large quantities regularly. Sixty per cent of the business came from the motion picture and printing and publishing industry with another 20 per cent coming from the textile and apparel industry. New York City furnished 28 per cent of the total traffic.²¹

When aviation was in its earliest days it was thought that the transportation of property would precede the transportation of passengers. It was assumed that air express would be the proving ground of transport flying and give the companies an experience in the handling of intricate and hazardous operating problems. Many early predictions of the future of air express were optimistic and foresaw the immediate acceptance of this new method of transportation, but these hopes were to be destroyed for several reasons.

In a series of articles in *Aviation*, Monte C. Abrams outlined some of the reasons for the failure of previous air express operations, prior to 1931.²² Summarized, these were: (1) Speed of air express was not of sufficient importance to most of the goods shipped by *rail* express to bear added transportation costs. (2) Lack of nationwide, coordinated air express facilities retarded its development. Prior to 1931, attempts to develop traffic were carried on independently by several individual operators with no direct connections with other air transport operators. There was no general set of rules for handling, no coordinated scale of rates, and no general agreement on the handling of shipments between airlines. Shippers

21. Hay, T. Park, "Air Express Experiences," *Aviation*, December, 1933, p. 364.

22. Abrams, Monte C., "Perplexities of Air Express," *Aviation*, November, 1931, p. 651.

had no way of determining through rates or points served by individual operators. (3) Too much emphasis had been placed on carrying goods by air whereas the real problem was in setting up and operating adequate handling and contact facilities on the ground.

Another reason for failure of many of the early air express operations was that quite a number of the companies organized at this time were begun on a shoestring basis without adequate capital resources to sustain the necessary developmental costs. Many of these small companies began operation with the hopes of getting mail contracts. Also, mail contractors themselves did not have the necessary resources to finance an air express operation until the traffic which would originate at lower rates would be sufficient to justify the service.

In August, 1932, a big step was made toward alleviating some of the former disadvantages of shipping goods regularly by air express. At this time seven major airlines, American Airways, Transcontinental & Western Air, Pennsylvania Airlines, United States Airways, Transamerican Airlines, Ludington Airlines, and Eastern Air Transport cooperated to form an organization to be known as General Air Express, and to handle air express matters for the several companies. It was the first major rival of the Railway Express Agency service whose main source of Traffic lay in United Airways Transport Corporation and Northwest Airways. These seven lines flew 16,000 route miles per day and operated between all of the major cities in the nation with the exception of those in the Northwest and through connecting airline companies provided service with Canada and Central and South America.

General Air Express was formed to enable these companies to act as a unit in the solicitation and handling of air express. A uniform and interchangeable bill of lading, waybill, insurance policy and manifest were provided, and a single payment sufficed to send the article all the way to its destination. The rates were uniform over the entire system and were such that a ten pound article could be sent from coast-to-coast at a charge of \$10.70. The charge from New York to Chicago for a similar shipment was \$3.80 in contrast to the Railway Express Agency charge of \$4.40.²³ The rate per ton-mile for the ten pound package going from New York to Chicago was \$1.06 whereas the rate of the Railway Express Agency system was \$1.19 per ton-mile.²⁴ Joint tariffs were published showing through

23. Quindry, Frank E., *Supra*, p. 182.

24. Sellg, N. S., Mitchell, J. D., and Burstein, A., *Supra*, p. 25.

rates for interline shipments. The pick-up and delivery service was provided by contracts with Postal-Telegraph company which had formerly successfully conducted a similar service for Transcontinental and Western Air when it was an independent air express carrier.

The General Air Express members restricted their liability to \$50 per shipment with an excess charge for each \$100 declared value. However, the shipper could get additional insurance of an unlimited amount through Chubb and Sons, (Insurance Brokers) New York for \$.15 per \$100. The limitations as to size and weight were as follows: Packages were accepted weighing over 200 pounds or measuring more than 150 inches, combined length and girth, unless special arrangements were made in advance. The rates were based on 200 inches per pound. Any package with density less than that paid the full pound rate.

In the larger cities, messenger boys picked up and concentrated the shipments at one point from where they were transported to the field by special air express motor trucks. The same system applied in delivery with the truck meeting the plane and transporting the goods downtown to be distributed to the individual customers by messenger boys. This system had a two-fold effect—it was efficient, and it associated the speed of the telegraph with air express.

The system of developing traffic as used by General Air Express was to divide a city into districts with a salesman responsible for all traffic originating in each district. These areas were thoroughly combed for prospective air express shippers, and a unique method of selling air express was employed in that the salesmen approached the sources of traffic from two contacts—the sales managers and the traffic managers. In New York City where the system was developed and used more extensively than anywhere else, it produced unquestioned results.²⁵

General Air Express was not a separate company but an interline company run and managed by a committee (Interline Express Committee) composed of a representative from each airline. The chairmanship rotated between the lines every year; but the arrangement for compensation for flying the express was not a pooling agreement. The interline tariff was made up of a combination of local rates. The division of revenue from a shipment going over two or more members' lines was handled on the basis of the percentage

²⁵. Hay, T. Park, "Air Express Experiences," *Aviation*, December, 1933, p. 365.

of total mileage flown over each line. Each member received approximately 80 cents per ton-mile.²⁶

The competition stimulated by General Air Express, both as to service and to rates, forced the reduction of rates by the Railway Express Agency, so in December 1932, the air express tariff was changed, and the rate per ton mile for a ten pound package from New York to Chicago dropped to \$.93 from \$1.19. The charge for a ten pound package from Chicago to New York was \$3.44—from New York to Los Angeles, \$10.44.²⁷ The Railway Express Agency's rate remained lower than the rate by General Air Express until June 1933 when the latter changed tariffs again and a 10 pound package went from New York to Chicago for \$.87 per ton mile.²⁸

In the latter part of 1934, Eastern Airlines inaugurated a new and improved service by providing a means of shipping by air in bond. Goods coming into this country could be transported in bond for delivery at any city with a customs house. This especially benefited Eastern Airlines as twenty cities on this company's routes had customs houses. In addition, shipments passing through this country from a foreign point of origin to a foreign destination could be flown under bond from the port of entry in the United States to the port of destination.²⁹

In August, 1934, a significant development in air express was the signing of contracts between Pan American Airways and the Railway Express Agency in which service between the 23,000 points served by the latter in the United States were to be connected by air with all the countries of the West Indies, Central and South America and later with the far east and Europe. To facilitate the service the two companies drew up an airway bill which replaced the complicated consular invoices, bills of lading, certificates of origin and other similar export shipping papers. This contract between Pan American Airways and the Railway Express Agency allowed a shipment to reach any point in Latin America within seven days. In 1935, the Railway Express Agency concluded arrangements with the Canadian rail express agencies so that it could provide swift service between cities in the United States and Canada.

Still into 1934, the high rates of air express prohibited extensive use of the service except for a few articles of extreme value and those of an emergency nature. It was estimated in 1935 that as high

26. Hay, T. Park, *Supra*, p. 363.

27. Quindry, Frank E., *Supra*, p. 182.

28. Sellig, N. S., Mitchell, J. D., and Burstein, A., *op. cit.*, p. 25.

29. *Business Week*, September 28, 1934, p. 31.

as 75 per cent of shipments were of the latter type. The nature of the shipments in that year is shown by the following breakdown of waybills made by the Railway Express Agency during that year:

TABLE V

*Relative Importance of Various Commodities From Standpoint of Shipments Expressed as a Percentage of All Shipments and as a Percentage of Total Weight, 1934**

Item	Percentage of Shipments (April 1934)	Percentage of Total Weight (July-December 1934)
1. Valuable papers	28.3	21.5
2. Advertising and printed matter..	20.8	19.8
3. News photos	14.3	1.6
4. Films	4.6	10.5
5. Parts: auto, plane, machine tools.	6.5	20.2
6. Newspapers	4.8	5.7
7. Clothing and textiles	3.2	3.2
8. Miscellaneous	17.5	17.5

*McMillan, Wayne C., "Air Express in The United States," *Journal of Land and Public Utility Economics*, August, 1935, p. 271.

In that same year New York and the surrounding area originated 33.5 per cent of the number of shipments producing 36.1 per cent of the revenue; Chicago originated 21 per cent of the number of shipments and accounted for 20 per cent of the revenue. San Francisco and Los Angeles accounted for 11.6 per cent and 11.4 per cent of the number of shipments respectively, and 11.2 per cent and 13.2 per cent respectively of total revenues.³⁰

The present organizational arrangements in handling air express were made in 1935, when all airline companies with the exception of Transcontinental and Western Air, that had formerly handled air express through General Air Express discontinued their arrangements with that company and signed contracts with the Railway Express Agency. Transcontinental and Western Air fought the alliance of the railroads and the airlines and refused to enter into the agreements, preferring to continue its contracts with the Postal-Telegraph Company. The Wilmington-Catalina Airline operating between the Wilmington airport at Los Angeles and Avalon remained independent until it ceased carrying air express in 1939. Hailed as a great advancement to air express, the arrangements with the Railway Express Agency have since been shown to be restrictive to the development of this type of traffic.

30. McMillan, Wayne C., *Supra*, p. 275.

Several reasons were given for the abandonment of General Air Express and the consolidation under one organization: (1) The Railway Express Agency arrangement provided a uniform service. There would be one waybill, one bill of lading, and one airway bill to handle the shipment originating and terminating at any point in North, Central or South America. It was a decided advancement to tie up all these countries. (2) The shipments in many instances were of such weight and volume that the messenger boys under contract with General Air Express could not handle them. For these, the trucks in use by the Railway Express Agency would be more efficient. (3) There was a decided waste in having two organizations engaged in advertising and soliciting the same traffic. Not only was there an overlapping effort in solicitation but to some extent they fought for each other's trade rather than developing new traffic. (4) The most economical and serviceable routing would be employed irrespective of which airline the goods would go on. (5) The unification of ground auxiliary systems would reduce costs of pick-up and delivery since more traffic could be spread over the same overhead costs, thus paving the way for reduced rates.

The arrangements made between the airlines and the Railway Express Agency were consummated by a contract made between the agency and each individual airline—each contract was separate and distinct with a contractual relationship running between each airline and the express agency but not running between the airlines. Each contract had the same uniform terms and provisions, and all airlines were to operate in the same relationship to the Railway Express Agency. The old contract which had been in use between the airlines previously contracting and the Railway Express Agency was discarded in favor of a new one very similar to the old one.

Transcontinental and Western Air, through its independent agency, made one last effort to develop air express on a large scale in 1936. On October 19 of that year this company inaugurated an all-express flight from New York to Chicago, offering a midnight to dawn service. In some cases the rates were reduced as much as 57 per cent from the regular express rates, and provided for a charge of \$12 for a shipment of 100 pounds from New York to Chicago in contrast to a charge of \$28 per 100 pounds for regular air express shipments.³¹ The equipment used was Ford Tri-motor monoplanes that had been re-built for air express use. This exclusive service was discontinued after a few months because of lack of traffic and because of Transcontinental and Western Air's inability to sustain the necessary

31. *Aviation*, November, 1936, p. 59.

developmental cost for such a venture.

Recognizing the futility of playing a lone hand in air express operations and thoroughly disgusted with the results of their last costly venture, Transcontinental and Western Air finally broke up its independent General Air Express Agency and contracted with Railway Express Agency on September 1, 1937. After this date the Wilmington-Catalina Airline remained the only carrier outside the orbit controlled by the Railway Express Agency.

In August, 1934, General Air Express and The Railway Express Agency issued a joint tariff at rates averaging \$.87 per ton-mile. The tariff formula issued then is the one in effect today with one modification and consists of a flat charge of 85 cents for shipments weighing $\frac{3}{4}$ of a pound or less regardless of length of haul, and of charges for other weights and hauls computed on the basis of 4 cents per pound per 100 miles plus a disappearing arbitrary commencing at 92 cents for one pound hauled 149 miles or less and declining thereafter, with weight and haul, at the rate of 4 cents per pound and 4 cents per 100 miles until dissipated, observing a maximum rate of 96 cents per pound and a minimum charge of \$1.00. The charges are stated in steps of $\frac{1}{4}$ pound up to 5 pounds, in steps of $\frac{1}{2}$ pound from 5 to 10 pounds, and in steps of 1 pound beyond 10 pounds. The short line mileage between airports used as a basis for air mail pay were adopted for computing air express rates under this formula. The flat charge for $\frac{3}{4}$ pound or less was abolished effective August 1, 1938, and the minimum of \$1.00 regardless of distance was substituted.³² Twenty-four scales of rates are provided to reflect the difference in distances.

The rate formula given above applies to packages whose weight and density is less than 400 cubic inches per pound. Any package with cubic measurement exceeding 400 cubic inches is charged the pound rate for each 400 cubic inches measurement. Charges are computed separately for each package in a shipment.

The rate to off-line points is composed of the air express rate to the airport nearest the destination and the rail express rate to the destination. The service to off-line points is generally by rail from the nearest city served by an airline. When the destination is not served by a railroad the Railway Express Agency supplies a local truck service.

In the larger cities where the traffic is sufficient to justify it, the Railway Express Agency uses a truck to pick up and deliver the

32. Selig, N. S., Mitchell, J. D., and Burstein, A., *Supra*, p. 25.

package at the airport. In the smaller cities, the Agency contracts with the local truck organizations that carry air mail from the Post Office to the airport. Effort is made to pick up the air express shipment as soon as possible in the larger cities and before the airplane takes off in the smaller ones. In case the shipment can reach its destination more quickly by all rail, the difference between air and rail express charges are refunded to the shipper, and the shipment goes by rail.

Since the last adventure of Transcontinental and Western Air, there has been little effort to really develop air express traffic, and the airlines have looked upon it merely as a fill-in to their regular passenger and mail traffic. Lack of traffic has not made special loading equipment necessary and the air express shipments are loaded into the baggage compartments of planes from hand trucks run out on the field. Shipments are handled in the same general field area as passengers, and all airlines but one handle air express shipments on passenger schedules only. However, due to the large volume of express traffic originating in New York destined for Chicago on United Air Lines night flights, this company has recently inaugurated an all express section on a night flight rather than block out additional passenger seats. The equipment used is DC-3 passenger equipment with seats covered to prevent their being injured. As yet there has been no return flight operated for air express only, and the express plane after reaching Chicago is serviced and used in passenger service.

Approximately 265 regularly scheduled planes in the 17 major airlines fly an average of 319,000 miles daily over 44,399 miles of airways in this country and nearly all of them carry express. Schedules flown offer coast-to-coast service in 15 hours eastbound and seventeen hours westbound. Through connections with Pan American Airways packages shipped Monday afternoon in New York reach Honolulu early Wednesday morning after a flight of approximately 5,000 miles. Shipments to China arrive in eight days from New York, and packages to Buenos Aires, Argentina in only four days. In addition to the service offered by the regular airlines, the Railway Express Agency utilizes the cargo service over the 205 mile pick-up feeder route of All American Aviation, Inc.

The latest breakdown of traffic made by the Railway Express Agency was in the month of April, 1939. The percentage of each major commodity moved by air express during that year is shown in Table VI.

TABLE VI

*Relative Importance of Various Commodities from Standpoint of
Number of Shipments Expressed as a Percentage of
Total Shipments During April 1939**

Commodity	% of Total Shipments	Commodity	% of Total Shipments
Wearing apparel	10.8	Books	3.1
Motion picture film	4.7	Hardware	2.9
Misc. machinery	4.7	Bank securities	4.7
Printed advertising	6.6	Aviation supplies	1.5
Electrotypes	6.9	News photos	6.0
Legal papers	6.8	Phonographs trans. ...	2.8
Electric products	4.2	Manifests	3.5
Automobile supplies	4.1	Jewelry	2.6
Magazines	5.6	Drugs	1.4
Flowers	2.2	Miscellaneous	14.9

*Appelgate, La Rue, "More Accurate Data on Air Express Shipment Now Available; How All Traffic is Handled," *Analyst*, New York, March 14, 1940, p. 388.

There are several disadvantages in the present arrangements between the airlines and the Railway Express Agency which must be corrected before there is an extensive development of this type of traffic.

(1) The unification of air express that resulted after the airlines contracted with the Railway Express Agency did alleviate the former disadvantages derived from having two competing agencies. The industry is a natural monopoly, and the public can be served more efficiently and at less cost than when it is subject to competition. But in contracting with the Railway Express Agency the airlines stifled the growth of air express by signing contracts which allowed the rail agency to have charge of sales solicitation and advertising for the entire system. With solicitation in charge of the competitor, it is doubtful whether the sales possibilities are now or will be exploited to the greatest extent. However, the Railway Express Agency alone cannot be blamed with lack of promotion as it is an acknowledged fact that the airlines have not been particularly anxious to put much effort into developing air express. So many unsuccessful attempts have been made in the past to develop traffic that most airlines officials have been disillusioned as to its immediate value. Furthermore, the problem of developing the passenger trade has been immense, and they have not wanted to accept the responsibility of developing an express service of which the ground functions, so necessary for successful operation, were outside their interests and experience.

(2) It was also thought at the time that the efficiencies brought about by the one company would reduce rates and stimulate traffic. That this has not resulted can be seen by the fact that from 1935 to the present only one rate change was made and that was to revise upward the minimum charge on shipments from 85c to \$1.00. Air express still contributes a minor portion of airline revenues. In 1935, the proportion of the revenues represented by air express was 2.4 per cent, and by 1939 it had increased only to 2.9 per cent of the gross airline revenues.³³

(3) It was thought that since the Railway Express Agency was well grounded in the economics of express operation, that sales and solicitation would be much more efficient and effective under its direction than under any other organization, but in 1939, the rail agency received 32 per cent of the gross air express revenue. It is difficult to understand why the rail agency should receive such a large portion of the revenues in as much as they do not assume any risk for their service. It is also difficult to understand why it costs the rail express agency so much to perform the pick-up and delivery service for the airlines. The amount they receive for handling air express shipments at their present high charges of from 5 to 8 times rail express rates is considerably more than their entire charges for rail express packages going a similar distance, which include payments to the railroads for line haul carriage as well as solicitation and delivery costs.

(4) The present contracts stipulate that the air express rate cannot be lowered to less than twice rail express rates. With the use of specialized equipment and with the increase in technological knowledge which will be stimulated by the present war, it is highly probable that the costs of operation will drop so that rates for air express could be only slightly above the rates charged at present for rail express.

The inactivity of the present airlines handling air express business in soliciting additional traffic and the fact that its control is vested in its closest competitor, has interested outsiders in the air express business. The costs of plane operation have dropped since the days Transcontinental and Western Air attempted to inaugurate an exclusive air express operation with Ford Tri-motor equipment, and as the rates offered by the existing airlines through the Railway Express Agency have not decreased since 1934, various groups are beginning to be interested in the possibilities for profitable all-express operation. In May, 1940, a corporation, Texas Air Freight, was

33. Air Transport Association of America, *Little Known Facts About the Scheduled Air Transport Industry*, Chicago, 1940, v. 2, p. 16.

organized in Texas for the purpose of conducting an express business within Texas. Lately this company has begun planning toward an air freight operation from Brownsville to Chicago, paralleling the present Braniff Airways route.

The General American Transportation Corporation, a subsidiary of the American Tank Car Corporation of Chicago, has made an extensive study of the possibilities for air freight development. The purpose of this study was to convince the railroads of the country that they ought to enter the air express business and it was pointed out that they should undertake the operations as a defensive measure—to control possible future expansion of an air express service.

The American Freight Corporation of California has been recently formed for the purpose of operating an air express business paralleling the three large transcontinental routes and the north-south route operated by Braniff Airways from Chicago to Corpus Christi, Texas. This company has filed a notice of intent to make an application for the above operation after it makes an extensive study of the entire air freight picture which will include ground distribution facilities, development of suitable aircraft, the most desirable routes, and the feasibility of making use of the facilities of the existing airlines.

In addition to these companies other groups have become interested in the prospects of the business. Truck operators in their recent meeting in Chicago discussed the desirability of their entering the field. The Universal Air Freight Corporation of New York City, a division of the United States Freight Company, has had its solicitors in various parts of the country contact shippers to ascertain the probable amount of tonnage which could be expected with lower rates.

In order to retain their control and influence in the air express business, the Railway Express Agency on October 19, 1938, applied for a certificate of public convenience and necessity as an air carrier under the grandfather clause of the Civil Aeronautics Act of 1938. The Railway Express Agency did not seek authority to engage in the operation of aircraft. The Civil Aeronautics Board decided on March 13, 1941, that the Railway Express Agency could be considered an air carrier in practice but that it was not necessary for it to have a certificate of public convenience and necessity in order to operate as such.³⁴

In addition to the other surveys being conducted by various

34. Civil Aeronautics Board Orders Serial Number 940, *In The Matter of The Application of Railway Express Agency, Inc.*, Docket No. 19-401(E)-1.

groups, the Railway Express Agency is conducting one of their own accord. The study is comprehensive covering the following items: history, rates, traffic, coordinated rail-air express service, facilities, service, costs, mileage, financing, loss and damage, alternative services, sales activities, foreign air express activities, sources of airline revenue and the future of air express. It is unknown what scale of rates is being used as a basis for this study.

The pressure from these organizations is forcing the airlines to broaden air express operations now, or as soon as equipment is available. United Airlines, American Airlines, Eastern Air Lines, and Transcontinental and Western Air have for the past few months been conducting independent surveys on probable air cargo traffic arising under lower rates and more varied services. The result of this interest on their part has culminated in the formation of a corporation, Air Cargo, Inc., which is mutually owned and controlled by them. It is contemplated that all airlines will participate in the ownership and control of this corporation as soon as it is found desirable for it to engage in air cargo carriage. The immediate purpose of the corporation is to make a survey to end all surveys on air cargo possibilities; and for this purpose, the controlling airlines have contributed \$100,000.

The army air corps has lately become the proving ground for many phases of commercial air activity, and its efforts at the transportation of property are no exception. On the basis of miles flown and freight carried, army operations are more extensive than the operation of Braniff Airways, the seventh largest commercial domestic airline. The Army's operations include scheduled flights linking four main air depots, local trips between Air Corps stations and airplane factories and weekly flights to Panama. In the first six months of 1940, the service moved 4,034,000 pounds of cargo and flew 1,928,000 miles. The primary shipments carried so far have been motors and assembled propellers. Because of the concentration of aircraft manufacture in southern California, that district is really the hub of the Army freight-carrying system. Wire and teletype messages keep headquarters informed at all times of accumulated freight at each station and of the loads on and the whereabouts of, the planes. A plane may start out with one load and pick up another one with a higher priority rating on the way. The Army is doing extensive work in operations which will be of great value to the domestic airlines when they attempt to really develop an air express business.³⁵

35. *Business Week*, April 12, 1941, p. 44.